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ONR PROJECT NO. 00.564
PART B

MAINTENANCE, REPAIRS AND ALTERATIONS
OF U.S. MERCHANT SHIPS UNDER
LEAD LEASE TO THE USER

8 July 1954

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Approved For Release 2000/05/15 : CIA-RDP79T01049A001000010002-7

Ship's Name GRT	Repair Yard	Location City	Country	Date of Overhaul		Description of Repairs and Alterations	Estimated Labor (Man-Hours)	Spares Provided	Cost of Overhaul U. S. \$
				Commenced	Completed				
Alexander Sereyev 7196	O.A.S.M.	Antwerp	Belgium	1949-52		See enclosure 1. Hull plate removals and strengthening, extensive engine repairs.		Extensive. See enclosure 1.	100,000
		Genua	Italy	5/1/52	8/8/52	Double bottom and frame strengthened for ice, overhauled engines and actuators. See enclosure 2.	190		\$600,000
		Uiel	Germany	1/23/53					
Aschaff 7196	Broda Yard	Venice	Italy	3/5/52	1/23/52	Repairs and overhaul.	121		
		Venice	Italy	2/25/53	1/21/53	Inspection and repair of hull, dismantling and repair of main engine and auxiliary machinery. Overhauling.	168		
Balsarovich 5810	Broda Yard	Venice	Italy	10/25/51	2/7/52	Repairs and overhaul.	69		75,000
Bessa 5806	Reymen-Sterft Kanal Neuenhagen Yards	Neubek Rupke	E. Germany	2/20/54	12/ /50	Repairs expected to take four months.			
Iskra (ex-Inver) 6086		Leningrad	USSR	1952		Repairs.			
Ivan Palamov 7176	Navantia Marine Engineering and Graving Docks Co., S.A.	Antwerp	Belgium	1/21/50	8/29/50	See enclosure 3. Repair of hull damage, extensive engine and boiler repairs.		Extensive. See enclosure 3.	
		Antwerp	Belgium	1949-52		See enclosure 4. Extensive hull repairs, main engine and shafting redesigned, main condenser retubed, boiler retubed.		Tailshaft & packing	
		Belkian	Netherlands	3/12/52	6/20/52				
Yamail 5878	Broda Yard	Venice	Italy	10/6/51	12/6/51		114		112,000
Jose Amaro 7176	Navantia Marine Engineering and Graving Docks Co., S.A.	Antwerp	Belgium	1/21/51	6/19/51	See enclosure 5. Extensive repairs of damaged hull, major engine overhaul.		Pump, seals and packing, propeller	
	Neuenhagen Yards	Neuenhagen	Italy	3/9/53	1/25/53	Minor repairs	168		
Ljaneza Podolsk 7216	Neuenhagen Yards	Rupke	Italy	2/ /51 (?)	5/ /51		825		98,000

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				Commenced	Completed				
Korogodsk	5627	Allentown, N.Y.	Italy	10/ /52	12/30/52	Changed outside plating, also, tape-side repairs and repairs of piping, removal of wooden partitions of bottom hold, cleaning of miller double bottom.	187		\$105,000
Kiev	5683	Marineville	Y. Germany	4/2/52		Boiler and engine overhaul.			
Kiev	7176	Marineville Marine Engineering and Graving Dock Co., S.A.	Belgium	4/14/52	5/10/52	See enclosure 6. Extensive repairs of hull damage and strengthening for ice, alignment of main engine and shafting.			
Kolkhoznik	7156	Marineville Marine Engineering and Graving Dock Co., S.A.	Italy	3/28/52	5/12/52	Repairs and overhaul.	67		66,000
			Italy	3/10/52	5/28/52		161		
			Italy	3/14/53	4/30/53	Minor repairs.	121		
Kuban	7176	Marineville Marine Engineering and Graving Dock Co., S.A.	Belgium	7/1/52	8/5/52	See enclosure 7. Hull plate repairs & removals, major engine overhaul.		1 steel propeller, plus two on order.	
		Marineville Marine Engineering and Graving Dock Co., S.A.	Belgium	8/ / 52		Repairs			
		Marineville Marine Engineering and Graving Dock Co., S.A.	Belgium	4/14/52	6/3/52	See enclosure 8. Minor hull repairs, realignment of main engine and shaft.		Tailshaft, steel propeller and machinery spares.	
		Marineville Marine Engineering and Graving Dock Co., S.A.	Italy	5/4/52		Repairs expected to last 4 to 6 months.			
Lavrentev	6077	Offshore Migration, Naval Ordnance Yard, Orlando	Italy	10/17/52	12/21/52	Repaired and replaced plating, repaired tape-side structures, piping, removal of wooden partitions of bottom hold.	114		112,000
Orsk	5638	Glenn Co.	Italy	12/19/52	4/14/52		212		70,000
Plekhanov	5630		Greek Britain	2/15/52	4/10/52		31		
Pskov	7176	L.V. Krasno Vostok	Belgium	4/8/52	7/2/52				
			Belgium	4/ / 52					
			Netherlands	3/24/52	7/4/52	See enclosure 9. Complete overhaul of hull and fittings, stern, engine and pump. Installation of CO ₂ fire extinguishing system.		Extensive. See enclosure 9.	230,000

Ship's Name	Repair Yard	Location	Country	Date of Overhaul	Description of Repairs and Alterations	Estimated Labor (Man-Hours)	Spare Parts Provided	Cost of Overhaul U. S. \$
OST		City		Commenced	Completed			
Hodina 7216 (Polish Register)		Naples	Italy	4/17/52	7/6/52			
Servatopol 7176		Antwerp	Belgium	5/22/50	6/8/50			
			Belgium	8/ / 50				
				1949-52				
	Groving Docks Co., S.A. Maritime Marine Engineering and O.T.O. (La Grasse) Shipyards	Antwerp	Belgium	12/14/50	12/23/50			
			Italy	4/5/52	5/26/52			
Sovetskaya Gruz	Varsov-Hart	Warsaw	E. Germany	/ / 50	4/26/51			
7176		Amsterdam	Netherlands	4/26/51	5/19/51			
	Varsov-Hart	Warsaw	E. Germany	5/19/51	6/10/51			
	Revalskoosmaa Shipyard	Naples	Italy	2/24/52	5/16/53			
		Riel	W. Germany	4/23/54				
Stalinsbad		Antwerp	Belgium	1949-52				
7176	Brada Yard	Venice	Italy	3/27/51	4/30/51			
	Reh. Drydock and Shipbuilding Co.	Amsterdam	Netherlands	2/13/52	5/19/52	101		99,000
Sukhona		Venice	Italy	1951		128		180,000
7212		Netherlands		10/30/51	1/19/52	120		
Sarlow		Orosa	RSS	1952				
5671	C.O.M.I. Yard	Orosa	Italy	1/19/54	2/14/54			
Taras Shvachenko	Revalskoosmaa Shipyard	Naples	Italy	4/16/52	7/7/52	159		85,000
5682								
Vladimirov	Revalskoosmaa Shipyard	Naples	Italy	9/21/51	11/21/51	72		71,000
6094								

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		City	Country	Commenced	Completed				
Tosak 5597		Riga	USSR						
Pompa 7134	Both. Drydock and Shipbuilding Co.,	Amsterdam	Netherlands	12/5/52	1/9/53	See enclosure 13. Drydocking, routine maintenance plus renewal of hull plating and replacement of damaged hull sections.	60		
Vostok 5763	Navalmechanics Shipyard	Reggio Kherson	Italy USSR	11/15/52 1953	2/26/53	Overhauled rudder, stripped and repainted hull, replaced running rigging, replaced bow plates (probably adding ice strengthening).	76		90,000
Vitoriya Pyatitskaya 5757		Rotterdam Hilversum	Netherlands Netherlands	11/8/52 4/24/53	2/23/53 6/12/53	Hull repairs. Arrived under tow from Riga, USSR.	110 20		
Dynamin 5840	Navalmechanics Shipyard	Reggio	Italy	3/ / 53					

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Enclosure 1

U. S. Navy Submarine

The following is a description of the repairs and alterations accomplished at Antwerp, Belgium, during the period 1949-1952:

dry dock time - 20 days

total repair period - 60 working days

Hull Repairs

Extensive bottom and topside steel work.

Ice stiffening installed.

Huller reinforced to A.S.S. requirements.

Approx. 203,955 pounds steel used for repairs, renewals and new installation.

Engine Repairs

Extensive - major items as follows:

Main engine and shafting realigned.

White metal renewed in bearings.

New piston rod and valve rod packing installed.

Eccentric straps retailed.

4" tubes in both boiler renewed also insulation part renewed.

Installed smoke detectors.

Deck winch cylinders relagged and covered with sheet metal.

Extensive pipe renewals to deck winches.

Extensive electrical work.

Gears Furnished

Main engine eccentric strap.

Cross head bearings.

Connecting rod.

Piston rod.

Connecting link for rocker lever.

Worm Vitae strips for stern tube.

Main engine piston rod and valve stem packing.

Stores Supplied

Ten (10) winch runners.

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Installations and Alterations

ten (10) 5 ton steel booms installed.

Low voltage switchboard installed.

Transformer installed.

Indicators for main engine cylinders.

Vessel completed special survey

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Enclosure 2

S.S. ALEXANDER SUVOROV

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The following is a description of the repairs and alterations accomplished by the shipyard Officine Allestimento Riparazioni Navi, Genoa, Italy, during the period 4 May 1952 to 21 August 1952.

1. HULL REPAIRS:

- a) Renewing and repairing hull plates from keel to upper water line;
- b) Partial renovation of the double-bottom, i.e., the floorboard, the keelson and the cross ribs, with relative joint plates and support sections:
- c) Repairing and renovation of the hull structure, the frame and the deck beams. Repairing and renovating portions of the bulwarks:
- d) Building new ice-supports by placing vertical frames in the prow zone between the existing frames and by placing horizontal supports from the bow post to the bulkhead of hold # 1. Place corner reinforcements welded in connection with compartment bulkheads of the holds:
- e) Partial renewing and repairing of the rolling chucks;
- f) Partial renewing of the internal structure of the rudder and total renewing of the 3 external shell;
- g) Renewing of rotten bottom planks;
- h) Repairing all the sea cocks and the outboard exhausts, changing valves where necessary; and
- i) Building new derricks, renewing the steel cords of the yard-arms and of the anchors; repairing and renewing the blocks and the wheels and axles.

2. ENGINE REPAIRS

- a) Repairing the main steam motor; making the necessary micrometric check of the line of axis and linkage; adjusting the booms, the crossheads, the turns, the jackets and the cylinders; adjusting the bushings and bearings by changing and correcting the metal; correction of the cams;
- b) Repairing the auxiliary motors and the circulation pumps, the diesel oil thrust pumps, the bilge pumps and the toilet pumps; repairing the electric generators and the motor generators;
- c) Repairing the refrigerating plant in the food storage lockers;
- d) Repairing the two hot water boilers, strengthening the walls and the diaphragms; renovating the fire proof masonry of the furnaces; repairing the diesel oil nozzles; and

e) Installing the new remote control gauges for measuring the diesel oil

in the tanks.

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Enclosure 2 (cont)

3. ELECTRICAL REPAIRS

a) Replacing rotted electric wires in the engine and boiler rooms; installing high-volt plugs; installing a new converter for low-voltage lighting; removing the alarm system network from the batteries and inserting it in the 120 volt network; replacing the water tight and glass ceiling bowl lamps where necessary.

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Enclosure 3 U. S. OFFICIALS ONLY

U. S. NAVY TRANSPORT

The following is a description of the repairs and alterations accomplished by the Mercantile Marine Engineering and Draving Works Co., S. A., Antwerp, Belgium, during the period 27 April 1950 to 27 July 1950.

Dry dock work days - 76

Hull Repairs

Extensive bottom and topside damage.

Upper and lower stringer in No. 1 hold were reinforced with butt straps.

Approximately 195,516 pounds steel used for renewals.

792 rivets renewed.

Engine Repairs

Boilers rebricked.

New water end for sanitary pump made and installed.

Extensive repairs and renewals to feed pumps.

Extensive repairs to main engine.

Feed pump repairs and renewals above normal.

Rods on auxiliary circulator and condensate pump renewed.

Extensive steering engine and rudder work.

Extensive repairs on steam generator engines.

Main circulator engine and impeller case opened repairs

affected and engine closed.

Refrigerator condenser and compressor overhauled.

Galley range rebricked.

Spares furnished

Spare rings for water end, piston and piston valves for feed pumps and

sanitary pump supplied by Contractor.

Spare steel propeller from S. S. FOKW placed aboard.

Two (2) steel built up propellers ordered.

Five (5) shots of anchor chain furnished by Contractor placed aboard as spare.

Three sets metallic packing for main engine piston rods and three sets for

valve rods supplied by Contractor and placed aboard as spares.

One (1) ring for S.S.

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Spares Furnished Continued

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One (1) eccentric strap complete.

One (1) piston rod.

Turbine cutters for boiler tubes

Boiler spares - check - 3 years, 1 - 12 teeth,

1 - 54 teeth and 1 - 64 teeth.

Stores supplied

none

Installations and Alterations

Two (2) wood booms removed and replaced with

(2) 5 ton steel booms.

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Enclosure 4

E. S. IVAN POZDNYAK

The following is a description of the repairs and alterations accomplished at Antwerp, Belgium, during the period 1949-1952.

Dry dock time - 20 days

Total repair period - 30 working days

Hull Repairs

Extensive bottom and topside steel work.

Approx. 20,000 pounds steel used.

Hull light to deep lead port and starboard sides scaled to bare metal and two (2) coats red lead applied.

Engine Repairs

Extensive - major items as follows:

Main engine and shafting realigned.

Boiler reuricked.

Main condenser retubed.

Deck winch renewals extensive, all cylinder lagged and covered with sheet metal.

Spares Furnished

Spare tail shaft

Lignum vitae strips for stern tube.

Boiler tube turbine cleaners, 2 for 1" and 2 for 2" tubes.

Stores Supplied - None

Installations and Alterations

ten (10) 5 ton steel booms installed.

Stone ballast removed from #2, #3, #4 and #5 lower holds.

New wheel house installed upper steering station - flying bridge deck.

New lathe installed.

Smoke stack renewed.

Tunnel in #4 and #5 hold sheathed with wood ceiling.

Electric gas analyzers installed on boilers.

Vessel completed special survey.

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Enclosure 5

S. S. JEAN JAURES

The following is a description of the repairs and alterations accomplished by the Mercantile Marine Engineering and Graving Docks Co., S. A., Antwerp, Belgium, during the period 21 April 1951 to 19 June 1951.

Dry dock time - 20 days

Total repair time - 40 working days

Hull Repairs

Extensive plate repairs and renewals due to damaged bottom.

Approximately 102,700 pounds steel used.

Approximately 1,000 rivets renewed.

Engine Repairs

Main engine and shafting realigned.

Remetalling of bearings above normal.

All pumps overhauled - cylinders bored and plungers built up.

New ebony rings fitted and pumps closed in good order.

Extensive overhaul on deck winches.

All branch lines renewed to control valves.

All piston rings renewed, total (40).

Main condenser retubed.

Boilers rebricked, insulation on case renewed.

Electric fixtures renewed.

New propeller installed, old one left aboard vessel as spare.

New tail shaft installed.

Spares Furnished

Spare case iron and ebony rings for every pump aboard vessel supplied by Contractor.

200 wood hatch covers supplied and placed aboard by contractor.

Set of lignum vitae strips for stern tube.

Stores Supplied

Turbine boiler tube cleaners, 1 for 4" and 1 for 2" tube.

Installations and Alterations

Four (4) new life boat davits installed.

Converter 115-12V placed aboard.

Vessel completed special survey.

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Enclosure 6 **U. S. OFFICIALS ONLY**

S. S. KIROV

The following is a description of the repairs and alterations accomplished by the Mercantile Marine Engineering and Graving Docks Co., S. A., Antwerp, Belgium, during the period 14 April 1951 to 10 August 1951.

Total repair time - 95 working days

Hull Repairs

Extensive plate repairs and renewals due to damage.

Extensive pipe line renewals in way.

Approx. 471,000 pounds steel used, including ice stiffening.

Engine Repairs

Main engine opened and engine and shaft aligned.

Installations and Alterations

Additional ice stiffening installed.

Vessel completed special survey on hull.

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Enclosure 7 **U. S. OFFICIALS ONLY**

S. S. KUBAN

The following is a description of the repairs and alterations accomplished by the Mercantile Marine Engineering and Graving Docks Company, S. A., Antwerp, Belgium, during the period 11 July 1949 to 9 August 1949.

Time in dry dock - 13 days

Hull Repairs

Minor damages, plate repairs and renewals.

Rudder reinforced to A. S. S. requirements.

Galley smoke stack renewed.

Engine Repairs

Major repairs as follows:

Main engine stripped - realigned and assembled. Three (3) bearings reinstalled.

Auxiliary circulator pump renewed.

Attached air pump cylinder liner rebored and plunger fitted.

All pumps opened, overhauled and closed.

Boilers rechecked.

San engine steam cylinder rebored and piston and rings fitted.

Tail shaft bronze liner machined.

Spares Furnished

One (1) steel propeller aboard as spare and two (2) steel propellers on order as spare.

Generator Engine Spares

Six (6) piston rings.

Three (3) piston valves.

Feed Pumps

Two (2) piston valves.

Four (4) pilot valves.

Fuel Oil Pressure Pumps

Sixteen (16) rings for steam piston.

Sixteen (16) rings for plunger.

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Attached Air Pump

Forty eight (48) Kinghorn valves. **U. S. OFFICIALS ONLY**

Auxiliary condenser eight (8) tubes.

Fifty (50) boiler hand hole gaskets.

Four (4) roller bearings for fresh water pump.

Four (4) main feed valve discs.

Two (2) sets of piston rings for ballast pump.

Stores Supplied

Four (4) 5 gallon tins of brickseal.

Installations and Alterations

None

Special Survey on hull completed.

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ENCLOSURE 8

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S. S. KURAN

The following is a description of the repairs and alterations accomplished by the Mercantile Marine Engineering and Graving Docks Co., S. A., Antwerp, Belgium, during the period 16 April 1952 to 3 June 1952.

Time in dry dock - 13 days.

Hull Repairs

Minor repairs - Hull completely painted inside and out. Rudder repaired.

Engine Repairs

Main engine and shafting realigned.

All pumps opened, repaired and closed in good order.

Seven (7) new telephones installed.

Pipe renewals to deck winches extensive.

Main and auxiliary condensers tested and repaired.

Boilers rebuilt.

Spares Furnished

Spare tail shaft. Spare steel propeller.

Excessive machinery spares supplied and placed aboard by Contractor.

Ten (10) port light glasses supplied and placed aboard by Contractor.

Stores Supplied

Stores supplied and placed aboard by Contractor.

Electric chipping hammer supplied.

Two (2) turbine boiler tube cleaners, 1 for 4" tubes and 1 for 2" tubes.

Approximately 2,500 pounds paint supplied by Contractor.

Installations and Alterations

Teak wood wheel house built for upper steering station - flying bridge deck.

Accommodation ladder installed.

Rock ballast removed from #2, #3, #4, and #5 lower holds.

Alteration to crews' quarters.

New lathe installed in work shop.

Fuel oil discharge by-pass installed at strainer.

Main engine indicators (3).

Vessel completed special survey.

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ENCLOSURE 9

S. S. PSKOV

The following is a description of the repairs and alterations accomplished by the shipyard N. V. Nieuwe Waterweg, Schiedam, Netherlands, during the period 26 March 1952 to 1 July 1952.

A. Hull Repairs

1. Supplied tugs, harbor pilot and boatmen for shifting vessel from dockyard harbor into drydock and out of drydock back into dockyard harbor, incl. 20 days drydock dues.

2. Bottom and boottop cleaned of fouling and afterwards painted with one coat of anti-corrosive and one coat of anti-fouling paint. (total 3700 square meters). 500 square meters of bottom and boottop-plating scaled of rust to the metal and painted with one additional coat of anti-corrosive paint.

Draftmarks on stem and stern, also Plimsoll marks repainted.

3. Rudder removed to workshop, lower bearing bushing renewed. Rudder stock guide bearing taken off and new bronze bearing installed. Rudder stock journal trued up in way of guide bearing. 8 rudder stock guide bearing fastening bolts renewed. Guide bearing lined up and fitted lugs to the stern-frame. 2 outside holes reamed out and new bolts fitted. Installed lub. oil pipeline $\frac{1}{2}$ " dia. 2 m. long. Upper thrustbearing examined thoroughly and taper thrust surfaces machined. Bronze strips (2) made and installed for taper surfaces. Renewed part of rudder bodyplating. Tested rudder body and rudder piece for leaks.

4. 472 running meters of welded seams and butts of bottom and shellplating chipped out and rewelded.

5. 195 square meters of bottom and shellplating 16 mm. thick renewed.

6. Tailshaft drawn, removed to workshop, placed in lathe for inspection and afterwards replaced on board. Spare tailshaft removed to workshop, propeller tried with and without key and this shaft brought back on board and coupled up. Coupling boltholes in spare tailshaft reamed and 6 new coupling bolts made and fitted. Lignum vitae in sternbush and neckbush renewed. Bronze neckbush renewed 425 mm. dia. 500 mm. long. One spare set of lignum vitae for sternbush and neckbush supplied. Stern gland repacked, incl. supplying newpacking. Tunnel shafting lined out and adjusted.

7. 300 rivets in shellplating and frames partly renewed and partly welded.

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8. All fuel oil tanks, incl. deeptanks $\pm 2000 \text{ m}^3$ opened up, cleaned and made gasfree, excl. removing and storing of fuel oil and subject normal sediment in tanks, afterwards reclosed, incl. renewing broken studs and gaskets of manhold doors.
9. All fuel oil and waterballast tanks filled and tested for survey.
10. 16 sea connections opened out, cleaned, valves and seats ground in, repacked and reclosed.
11. 20 sineplates fitted on rudder and sternframe in way of brass propeller (150 x 90 x 25 mm.).
12. Bilge ceiling and steel covering plates over bilge ceiling in cargo holds No. 2, 3, 4, and 5 removed, bilges cleaned, scraped and painted with two coats of paint, $\pm 200 \text{ m}^2$, bilge ceiling and steel plates refitted and 210 sq. m. wood ceiling and 210 sq. m. steel covering of 2 mm. thickness renewed. (wood supplied by ship).
13. 43 square meters of tank topplating renewed 12 mm. thick and 25 sq. meters of tank topplating faired in place..
14. Repaired steel hold ladders as instructed.
15. Lifeboat No. 4 repaired with 2 multiplex patches 12 mm. thick 0.5 sq. m. Lifeboat davit of No. 2 lifeboat repaired.
16. Built new well-insulated oak wood navigation house on flying bridge platform as per drawing No. 112 furnished by Master. Installed existing compass on top of navigation house.
17. Made new steel eyebolts and cleats as per sample and installed as directed. (15 in all).
18. Installed railings on the crosstree platform of the mainmast 9 m. steel rods 20 mm. dia.
19. 250 cargo batten clamps renewed.
20. Made and installed guardcovers on manholes of double bottom tanks, 15 covers 700 x 500 x 120 x 7 mm.
21. Built up worn-out places for warping ends of mooring winch and windlass by welding, total 4 drams cast iron dia. 500 mm. with 150 mm.
22. Renewed rubber packing of 20 watertight doors about 5 m. x 30 x 15 mm. rubber per door.
23. Renewed and fitted in place ships' galley range.
24. Made and installed 12 bronze wingnuts for the forepeak hatchcovers and for hawsepipe covers.

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25. Removed 9 old wooden cargo booms, furnished and installed 9 new booms with capacity of 5 tons, overhauled cargo handling gear, rigged up same, tested according to the rules and furnished certificate (9 booms 17 m. long 310 mm. dia. and supplied 9 spare blocks).
26. Renewed 1 cargo hold ventilator cowl 500 mm. dia.
27. Lowered heavy lift boom of 50 tons capacity, disassembled all blocks, viz; 4 quadruple sheave blocks and 4 sheave blocks, reassembled all blocks and re-installed. Re-rigged boom with new wire cables and tested according to the rules and furnished certificate.
28. Made and installed 8 new studs in place of missing ones in anchor chains and welded 5 studs. Anchor chains and anchors scaled and wirebrushed, afterwards same painted with oil.
29. Made and installed 16 mesh strainers 3 mm. steel on all suction branches of bilge pipelines and attached same to the pipe by means of straps.
30. Removed 80 sq. meters old mastic in crews' accommodations, alleyways, and cabins, installed new mastic and painted.
31. Made new steel rudderstock 3 m. long, 270 mm. dia. according drawing No. 26699.
32. Furnished and installed C.O. 2 fire extinguishing system station (36 bottles) and installed pipelines to engine and boiler rooms as per drawing furnished by Master, incl. making new steel deckhouse.
33. Cut off remains of welding from torn off bilgekeel portside, made and installed 10.5 m. new bilgekeel NP 26. Starboard bilgekeel faired in place and cracked welding of bilgekeel chipped out and rewelded.
34. Tested all heating coils of the double bottom tanks, deeptanks and service fuel tanks and marked defects, excl. repairs or renewals.
35. Renewed 30 doorlocks, repaired 11 wooden doors and replaced filling pieces.
36. 15 automatic flushvalves in w.c. bowls renewed. 1 1/2" dia.
37. 5 steel foodboxes in galley repaired, 1 m x 1 m x 0.50 m.
38. Rubber packing in 60 porthole glasses renewed. dia. 300 mm. rubber 8 x 8 mm.
39. Four (4) glass discs made for the engine telegraph with commands in the Russian language dia. 275 mm.
40. 10 mirrors in washing and shower rooms renewed, 500 x 400 mm.
41. Installed telephones in Captain's, Chief Engineer's, Chief Officer's and First Officer's cabins as well as in 12 lockers and 10 telephones

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in all). Installed telephone sockets on the accommodation ladder posts Port
and Starboard. Furnished one portable telephone for Officer on duty.

42. Cargo hold and tweendeck walls No. 4 and 5 scraped, cleaned and
wirebrushed and painted same with one coat of red lead paint and one coat
of grey hold paint, total 6300 sq. meters.

43. 3 steel boxes made and fitted re firehoses.

44. Cracks in railbar of bulwark in various places cut out, V-ed
and welded electrically, about 20 m. Two straps made and fitted in bulwark
plating 900 x 200 x 10 mm. Bent railbar of bulwark on aftdeck portside
heated and faired in place. One bulwark plate stanchion on portside
midships renewed 1100 x 450 x 10 mm. Bulwark plating on portside midships
cropped, part of plating renewed and welded electrically, incl. stagings,
400 x 400 x 10 mm. Bridge stanchion on railbar portside welded electrically.
Missing parts of railwork on aftdeck and boatdeck port and starboardside
renewed 2 x 200 x 1 1/2", 2 x 1000 x 1 1/2". Hinges of steel doors in
mast deckhouse renewed.

45. 100 stiffening bars made and welded under tank topplating in No. 2
and 3 double bottom tank, according drawing No. 2849.

46. Internal repairs in connection with shellplating repairs in way
of the following compartments, viz:

Starboard No. 1, 2, 4, and 5 holds and forward deep tank, Portside No. 1 and 2
holds, forepeak and forward deep tank,

3 floorplates partly removed, faired and replaced, total 1.5 m²

8 floorplates faired in place.

1 tank topplate partly renewed 1.6 m².

4 channelbar shellframes NP 25 renewed, total 19m.

4 channelbar shellframes NP 25 removed, faired and replaced, total 13.5 m.

3 channelbar shellframes NP 30 removed, faired and replaced, total 12 m.

27 channelbar shellframes faired in place.

5 T-bar ice frames renewed, total 24 m.

2 bilge bracket plates removed, faired and replaced, total 3 m.

1 bilge bracket plate faired in place.

Various ballast pipes, airpipes, sounding pipes, cargobattens and degauzing
cables removed for access and replaced.

Forepeak bulkhead wingplate partly renewed, total 2 m².

Cracked upper and lower shellstringer from forepeak bulkhead to frame No. 18
portside, with brackets and angle lugs, renewed.

4 deckbeams of tweendeck partly renewed and 4 deckbeam brackets renewed.

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Deep tank deck and tweendeck faired in place.

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3 shellplates faired in place.

47. Bottomplating

3 butts of A strake on starboard side cut open, plates faired and afterwards butts welded electrically. Stiffening angle lugs fitted on bottom in way of faired plates. (36 lugs in all) according to drawing No. 2849A.

48. Oakwood bookcase and new table for cabin of chief engineer made and fitted.

49. Insulation cellar in No. 1 hold repaired.

50. Canvas covers made and fitted for heavy derrick.

51. 4 chairs, table and 2 doors in captain's room repaired and polished.

Piano and radio gramophone, also writing desk in cabin of chief engineer polished.

52. Navigation lights repaired as instructed.

53. Supplied on board the following materials, necessary for carrying out the repairs:

50 m. 2 1/2" firehoses, 20 kg. graphite, 150 m. Manila rope, 1 1/2", 25 brooms, 1100 kg. redlead, 507 kg. deck paint, 1000 kg. topside paint, 15 chipping goggles, 5 l. metal polish, one pair of sail pinchers, 15 sail needles, 4 l. carter oil and 12 electric globes.

B. Engineering

1. Main Engine:

a. H.P., M.P. and L.P piston junk rings and pistons shimmed up in lathe. Cylinders opened out and reclosed and repacked.

b. H.P., M.P. and L.P bronze crosshead brasses renewed, dia. 197 mm. All crankshaft journals and pins shimmed up in lathe. Main bearings reinstalled dia. 360 mm. Crankshaft brought in line. 3 crankpin bearings reinstalled. Ridges in H.P., M.P. and L.P. cylinders ground out.

c. Removed all slidevalves, opened out and cleaned for examination. Bronze straps renewed on M.P. slide valve and spare straps supplied. Slide valve rods shimmed up in lathe and packing renewed. Piston rods shimmed up in lathe and packing renewed. Crosshead journals shimmed up and guide slippers adjusted. Ahead and astern guides removed, machined, refitted and lined up. Slide valve gear removed, radius checked, ridges removed and liners fitted. Guide bearings of slide valve rods reinstalled. H.P eccentric straps reinstalled and eccentric discs shimmed up.

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d. Reversing gear traverse shaft removed, journals shimmed up and bearings renewed.

Rocking lever link bearings opened out, scraped to pins and reclosed and link pins trued up. Thrustshaft opened out, segments scraped, bearing casing cleaned and all closed up.

Main engine governor valve opened out, ground in and reclosed.

2. Tunnel shafting and thrust shaft brought in line with crankshaft (5 tunnel bearings dia. 420. mm.)

3. Airpump bucket reinstalled with white metal dia. mm. New Kinghorn valves 20 off supplied and fitted, dia. 100 mm.

4. Bilge and sanitary pump plungers shimmed up, bronze neck and gland bushes renewed, dia. 114 mm.

5. Pump body of dirty oil renewed, dia. 70 mm. (bronze).

6. Boilers:

Boiler mountings opened, ground in, repacked and reclosed. Opened up and reclosed all handhole covers. All 4" boiler tubes renewed. Boilers tested hydraulically after repairs. Brickwork in both boilers renewed as necessary and covered with brick seal. Sideplates of boilers straightened. Top isolation of both boilers renewed.

Isolation plates on boilers removed, faired and replaced. Gas leakage between brickwork and isolation at backwall of starboard boiler made tight. 52 studs renewed in furnace front and back front dia. 1/2" and 5/8". Made and installed and furnished 10 diffusers 400 as spare. Furnished 4 special sootblower hoses.

Note: Repairs or renewals of small dia. watertubes not included.

7. Winches:

5 cylinder covers renewed

50 clutch blocks (bronze) renewed.

16 valve seats for steam and exhaust steam valves renewed.

24 slide valve rods renewed 16 mm. dia. 450 mm. long.

10 Ferrodo brake linings renewed, length 2.5 m. breadth 100 mm.

Slide valve gear of 2 winches overhauled, holes reamed out and pins renewed, dia. 18 mm.

40 piston rings renewed, dia. 160 x 178.

22 piston rods renewed, gland bushes bored out, dia. 37 mm. length 600 mm.

4 large toothwheels renewed, 1000 mm. dia. and 6 small toothwheels 400 mm.

material cast iron.

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18 winch cylinders insulated, new lagging plates of galv. iron plate made and fitted.

Two heavy winch crankshafts put in lathe for examination.

2 main bearings renewed, dia. 100 mm. length 200 mm.

88 m. copper drain pipes renewed, dia. 1 1/4 mm.

All bearings of 10 winches opened up and reclosed, excl. renewing of bearings.

8. Refrigerator:

2 cylinders of compressor ground out and pistons renewed, dia. 110 mm.

24 piston rings and scraper rings renewed.

6 thermostats and magneto valves renewed.

Inlet and outlet valves of icebox opened, all coils blown out and cleaned and re-assembled.

9. Steering Engine:

2 cylinder ridges ground out and piston rings renewed, dia. 203 mm.

Two piston rods shimmed up in lathe, neck and gland bushes renewed, dia. 43 mm. long 600

Two nozzle rings renewed and fitted on regulating valve dia. 88 mm.

Electromotor receiver disassembled, ground plungers, renewed packing and re-assembled.

10. Main Condenser:

1360 condenser tubes supplied and fitted, dia. 19 mm., length 3109 mm. and packing between tube plates and condenser flange renewed.

11. Circulating Pump:
Steam Engine:

Steam piston shimmed up in lathe and piston rings renewed, dia. 140 mm.

Ridges in cylinder ground out.

Crosshead and guide shoe brought in line.

All moving parts of crosshead and crankpin bearings overhauled and scraped, lubricating oil pump overhauled, lubricating oil pipes cleaned and moving parts lined up.

Centrifugal pump opened out, ground off main bearings and shaft brought in line and pump closed up.

12. 3 Dynamos:

Electric generator steam engine - 3 engines.

All moving parts disassembled, cylinder crankcase and armature removed.

Centre lines of shafts lined up and re-installed. Crosshead guides rebored

New piston rings made and installed, piston rod ground, new bush packs made.

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and installed. New packing glands made and installed. New steam slide valve rod, bush neck and packing gland made and installed. Crankpin, crosshead bearings, eccentric straps disassembled, oilgrooves out and bearings fitted to journals. Crosshead guide slipper removed, slipper and guides scraped. Cylinder, piston rod and crosshead guides ground and re-assembled. Flywheel, governor gear disassembled, cleaned out examined, cleaned out and reassembled. Lubricating oil pipeline removed, cleaned, blown out and re-installed.

13. Auxiliary Condenser Airpumps:

Cylinder rebored, new piston rod, bushneck and packing gland bushing made. Hole in cylinder cover drilled, new stuffing box made, studs installed, new guide piston rod made.

New piston rings with double grooves made to improve work of piston rings, piston ring expansion springs installed.

Slots in piston rings for expansion springs made.

14. Circulating Pump Auxiliary Condensers:

6 piston rings renewed 255 mm. cast iron

6 bucket rings renewed 300 mm. ebonite

6 new piston rings made for steam cast iron

15. Feed Pump No. 2:

Bronze bucket rod renewed, dia. 66 mm. length 1200 mm.

Steel piston rod renewed, dia. 65 mm. length 1200 mm.

12 ebonite bucket rings renewed, dia. 205 mm.

16. One automatic feed regulating chest renewed in bronze to sample, complete with valves.

17. Fuel Pumps:

16 cast iron piston rings renewed, dia. 191 mm. double rings.

16 bronze bucket rings renewed, dia. 191 mm.

Piston rods shinned up in lathe white metal and neckbushes renewed dia. 35 mm. length 500 mm.

Automatic valve overhauled and 8 diaphragms renewed dia. 130 mm.

8 piston rings for oil piston renewed, dia. 130 mm. (cast iron).

18. 7 filters for feedwater filter tank. 12 m² gauze renewed.

19. Sanitary pump water cylinders bored out, 2 pistons built up by welding and piston rings renewed, dia. 180 mm. Seat in valve chest bored out, new seat made and fitted and 2 bronze valve lids renewed. Seat 120 mm. bronze, valve lids 120 mm. bronze.

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20. Washwater pump, cylinder cover renewed, cast iron, to sample.

21. Firepump 2 cylinders bored out, dia. 280, piston welded up and machined, 4 piston rings renewed, ebonite.

22. Piping:

Sanitary pump one bent pipe renewed, dia. 127 mm. cast iron. Steam and exhaust steam pipes in forepeak renewed, dia. 1 x 1/2" - 2" length 60 meters, dia 1 x 1/2" - 1/2" length 50 meters. 20 meters hotwash water pipes renewed, dia. 3/4" new pipes insulated; 15 meters steam and exhaust steam pipes made and fitted in officers bathroom, dia. 1/2" copper, 4 steam heaters supplied and fitted. 20 bronze tapcocks renewed of hot and cold water system dia. 3/8" - 1/2". 10 bronze valves supplied and fitted for steam radiators 1/2" dia. 10 new sprayer douches (showers) supplied and fitted in washrooms. 12 meters exhaust steam pipeline renewed in galley, dia. 1/2". 150 meters steam and exhaust steam pipe line on deck renewed, 75 mm. steel. Pipes insulated.

23. 40 manometers overhauled, repaired and tested.

24. One indicator for main engine supplied with the necessary spare springs, type MAYHACK.

25. Blow off pipes of both boilers renewed, 12 m. dia. 2" steel. 8 m. steamline of sea cocks renewed with 2 stop valves, dia. 1 x 1/4" steel. 6 heads of small water turbines made as per sample. Condenser of cooling installation tubes and tube plate renewed, 44 tubes dia. 16 mm. length 1550 mm.

Slide valve chests of the 3 steam dynamos bored out to the same size.

Impeller shaft of circulation pump welded up electrically in way of packing bushes and turned off. Both neckbushes renewed.

One length of pipe of hot water tank renewed in steel and one flange renewed on tank.

Two Feed Pumps:

Cylinders of both pumps (waterend) bored out to the same size. Pistons welded and turned off on one diameter.

12 ebonite piston rings supplied for spare dia. cylinder 240 mm.

14 m. steel deckwashline 4" dia. renewed.

28 bronze nipples of evaporator coils renewed.

New supply lines on evaporator made and fitted (as per drawing).

5 new thermometers supplied and fitted, 4 zero to 150° C., 1 to 400° C.

Two steel guides for winches made and fitted, as per sample.

770 x 100 x 35 mm. and 2 steel guides 550 x 77 x 32 mm.

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4 bronze liners of guide shoes for the heavy winches made and fitted as per

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sample. 255 x 115 x 20 mm.

2 crankpin and 2 crosshead bearings for winches renewed, bronze 80 x 120.

One winch reversing lever stool renewed as per sample.

6 bridges for steam slide valve levers of winches renewed.

Broken flanges of injector pipe reworked in place.

Branch of inlet condenser renewed, length 200 mm. dia. 3".

20 ebonite rings made and supplied, dia. 280 mm.

20 steel inner rings made and supplied.

2 star spanners made as per sample. 1 x 1 1/4" - 4".

One cast iron flywheel made and supplied as per sample for lifeboat motor
dia. 300.

2 pneumocators for settling tanks supplied and fitted.

Engineers Stores Supplied:

3000 square packing rings for boiler covers.

50 oval packing rings for boiler covers.

10 asbestos manhole cover packing rings.

20 m. rubber hose 1".

15 m. rubber hose 2".

20 Kg. aluminum paint.

200 gram grinding paste.

10 mtr. Ferrode brake lining.

50 Kg. white enamel paint.

50 Kg. linseed oil.

50 Kg. red patent paint.

50 Kg. waste

5 paintbrushes.

5 Kg. asbestos packing 3/8".

100 Kg. telesector oil.

1 sheet klingerit 2 mm. (one square meter).

Steam piston of dynamo No. 1 renewed.

Steam piston rod from centrifugal pump renewed, with new gland and neckbushes.

3 telegraph glasses renewed.

2 telegraph tongues of bells renewed and fitted.

3 electric turbines for watertubes complete, with head and flexible hoses
supplied. (one turbine for 4" tubes - 2 turbines for 2" tubes).

Crankshaft of dynamo No. 1 shined up in lathe, and bearings reinstalled.

Shaft of centrifugal pump shined up in lathe and bearings reinstalled.

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Portside Boiler:

Main steam valve, valve lid shinned up.

Safety valve of steam heater valve lid shinned up.

Valve lids of safety valve shinned up.

26. Crankshaft of dynamo No. 3 shinned up in lathe and bearings reinstalled. Cover of one steam cylinder renewed.

27. 3 dryers for refrigerator renewed and 3 dryers supplied as spares.

28. Damaged propeller blade edges ground off.

L.P. piston ring renewed.

4 steel springs for safety valve of sanitary pump renewed.

Extra pieces for renewing of cast iron piston of sanitary pump supplied.

cylinder cover of No. 1 dynamo renewed.

Steering engine slide valve liner renewed.

5 manometers repaired and tested.

Fan engine slide valve guide rod renewed.

Two stainless steel valve lids of superheater valves renewed.

M.P. and L.P. eccentric rings of main engine reinstalled.

Two 1/2" and one 3/4" condenspots (steam traps) supplied.

Cast iron piston of No. 3 dynamo renewed.

Repairs to stringers inside P.S. settling tank.

29. Steam smothering pipeline in tweendeck No. 1 hold, new deckpiece 1 1/2" with coupling made and welded in deck, incl. stagings.

6 x 1 1/2" steam smothering pipeline in hold no. (?)

Deeptank No. 2, S.E. 2 lengths steamspirals welded, 30 clips in deeptanks No. 2, P.S. and S.E. welded.

Deeptanks No. 2 portside 8 lengths spirals welded together.

30. Condenser division plate partly renewed.

31. Storage of fuel oil, incl. pumping back on board.

32. New spare tail-end-shaft with continuous Muntzmetal liner made and supplied.

33. 2 telemotor valves supplied as per sample on board.

One draincock supplied and fitted on starboard boiler.

42 cast iron bridge pieces for both boilers made, supplied and fitted in place.

Cylinder cover dynamo No. 3 renewed.

4 intermediate valves of both boilers opened out, valve lid and seat ground

in place and tested.

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Condenser cover repaired, copper patches made and fitted.

Steel piston rod of auxiliary condenser circulating pump renewed and cross-head shinned up.

Airpump bucket built up by bronze welding and machined.

Cylinder of auxiliary circulating pump bored out.

Bronze piston built up by welding and machined.

2 leaky flanges in main steamline repacked.

One heavy winch disconnected and transported to workshop, afterwards back to ship and refitted.

Steam and exhaust steam pipes disconnected and removed for access, afterwards pipes refitted and rejoined. Two frames in way of crankshaft bearings bored out in machine. Inlet valve of refrigerator disconnected, removed and afterwards refitted.

Valve body bored out, seat renewed and fitted, valve spindle of sanitary pump shinned up, bronze nut renewed, cooling water line to bearings repaired.

34. The following material supplied for engine department:

50 Kg. paraffin

100 Kg. white enamel paint

0.5 Kg. filter hair

0.3 Kg. lead wire

3 lub. oil cans

Two feelers.

Two carborundum discs.

Five star spanners.

Three screw drivers.

Two freon bottles recharged.

35. One new cast iron condenser door for main condenser made, machined and supplied.

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Enclosure 10

S.S. Stalinbad

The following is a description of the repairs and alterations accomplished at Antwerp, Belgium during an unspecified period between 1949 and 1952.

Hull repairs

Minor hull repairs.

Renewed 4,000 wasted rivets.

Engine repairs

Main Engine and shafting realigned.

Rebored air pump cylinder.

Boilers rebricked.

Spares Furnished

Twenty (20) main shaft coupling bolts placed aboard.

Main Engine metallic packing and springs for piston rods and valve rods.

Installations and Alterations

Ice stiffening installed, approx. 94,000 pounds steel used.

New galley range installed.

Main engine indicators placed aboard.

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Enclosure 11

S.S. SOVETSKAYA GAVAN

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The following is a description of the repairs and alterations accomplished by the Warnemuende Shipyard, Warnow-Werft, East Germany, during the month of December 1950. The overhaul was completed on 10 June 1951.

- a) Replaced cylinders in anchor windlass motor.
- b) Completed rods for remote control of fuel oil slides and valves.
- c) Overhauled all fuel line, ballast line and bilge pump line valves in engine room.
- d) Took aboard and assembled fire pump, feed pump and oil injection pump.
- e) Rudder house and ventilator socket on navigation deck 95% completed.
- f) Portside engine room plates aligned.
- g) Starboardside engine room ribs removed and aligned - not yet replaced due to lack of material.
- h) Installation of handrails on boiler room walls and longitudinal walls of engine room 30% completed.
- i) Tested various tanks for tightness.
- j) Removed rudder shaft bearing measured shaft and bearing wear.
- k) Overhaul of sandboxes, gun mounts, valve housings, hawser rollers and davits 25% completed.
- l) Maindeck and steerage reinforcement 80% completed.
- m) Continued with derusting cleaning and painting throughout the ship.
- n) Installed temporary heating system in corridors of the various decks and bunkers.
- o) Continued work on cabin and held heating system.
- p) Laying cable for electrical equipment.

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Enclosure 12

S.S. Taras Shevchenko

The following is a description of the repairs and alterations accomplished by the shipyard Navalmeccanica, Naples, Italy, during the period 16 April 1952 to 7 July 1952.

- a. External painting and cleaning of hull;
- b. Repairing and renovations of external steel sheets;
- c. Cleaning of fuel tanks;
- d. Hydrostatic tests;
- e. Rudder repairs;
- f. Repairing of propeller and propeller shaft;
- g. Substitution and/or repairs to various pipes;
- h. Revision of intake valves; and
- i. Miscellaneous repairs to motors, holds and bridges.

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Enclosure 13

S.S. Tungus

The following repairs and alterations were scheduled for accomplishment at the Netherlands Drydock and Shipbuilding Co., Amsterdam, Netherlands, during the period 5 December 1952 to 9 January 1953.

- (1) Drydock vessel for period of 10 days, including shifting in and out of drydock and examination of underwater parts of the hull, rudder, rudder post, propeller, and lignum vitae.
- (2) Remove fouling and clean bottom and bootop and paint with one coat of anti-corrosive and one coat of anti-fouling paints (total area 3500m²). Remove rust from 500m² of bottom and boottopping and scale to metal followed by an additional coat of anti-corrosive paint, repaint waterline 110 mm. wide. Repaint draftmarks on stern and stem and Plimsoll marks on both sides. Paint to be supplied by yard.
- (3) Remove, fair and reinstall steel shellplates between frames 10 and 45, port and starboard above the 23 foot waterline. Plates are 14 - 15 mm. thick, total area of plate is 100m². Includes hose testing.
- (4) Renew 5 steelplates of outer shell plating between frames 10 and 45 at the 23 foot waterline. 45m² of plates 14 - 16 mm. thick. Includes hose testing.
- (5) Renew 3 steelplates of outer shell plating at Hold No. 1 between frames 30 and 42 at the 12 foot waterline. 36m² of plates 16 - 18 mm. thick. Includes hose testing.
- (6) In damaged sections of the hull mentioned above in items 3, 4, and 5 of the specifications:
 - a. Fair frames on port and starboard sides (18).
 - b. Renew frames (6), including hose testing (Dimensions of frames calculated at 5000 mm. x 12" x 4" x 4" x 1/2").
 - c. Fair two bulkheads between holds No. 1 and 2, remove and reinstall bulkhead stiffeners, 50m² total. Includes hose testing.
 - d. Fair two side stringers, weld cracks and reinstall. 16 running m. in total.
- (7) Renew 4500 rivets in the outer shellplating above and below waterline on both sides; 25mm. Includes stages and hose testing.
- (8) Weld up 600 rivets in various places of the hull 1/2 - 25mm.

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(9) Renew 10m² of bottomplating, thickness 17 - 19 mm.

(10) Cut out and reweld 220m. of butts and seams in shellplating; 450m. butts and seams to be cleaned, wirebrushed and preserved with white lead.

(11) Forepeak and afterpeak (195m³)

- a. Remove 50% of all cement.
- b. Scrape and wirebrush steelplates to bare metal.
- c. Test with water pressure.
- d. Cement wash with two coats.

(12) 6 fresh water tanks (drinking water, bakery, laundry, cofferdam) (160m³).

- a. Remove old cement and scrape and wirebrush to bare metal.
- b. Test tanks.
- c. Paint with two coats of red lead.

(13) Sixteen ballast tanks, fuel oil tanks, deeptanks and lubricating oil tanks. (2930m³).

- a. Clean and clear of gas.
- b. Test with water pressure.

(14) Three boiler cofferdams and No. 4 boiler feedwater tank (230m³).

- a. Remove old cement.
- b. Scrape and wirebrush to bare metal.
- c. Test all tanks.
- d. Paint with two coats of cement wash.

(15) Sea connections and valves.

- a. Open covers and inspect.
- b. Disassemble sea valves.
- c. Grind valves and seats.
- d. Machine valves and seats if necessary.
- e. Reassemble.
- f. Renew zinc plates.

(16) Before shifting vessel into dock the propeller-shaft, intermediate and thrust shafts, and crank shaft are to be disconnected. Measure edges and displacement of the shafts (before and after docking): 4 ea.

(17) Remove propeller shaft. Check wear of stern tube and renew lignum vitae, if required. Remove any discovered defects of the propeller shaft.

(18) Fair bulwark and bulwark rails.

Fair bulwark stanchions:

Rails and bulwarks 40 running m.

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- (19) Hull above boettopping.
- a. Clean and wirebrush on both sides.
 - b. Paint bare spots with two coats of red lead.
 - c. Apply one coat of paint.
 - d. Paint name of vessel and port of registry in Russian and Latin letters on bow and stern.
- (20) Chip, wirebrush to bare metal and paint with 2 coats of red lead 50% (4500 sq.m.) of all steel in cargoholds and tweendecks, including sides, frames, beams, pillars stringers, knees, angle-stiffeners, both sides of tweendeck and lower part of maindeck. Scrape and wirebrush remainder of the steelwork (4500 sq.m.). Paint all steelwork (9000 sq. m.) with one coat of grey paint. Excludes painting of cargo bottoms and wooden hatchcovers. Includes stages and supply of paint.
- (21) Chip and paint bulwark and stanchions with two coats of red lead and two coats of grey paint (400 sq. m.).
- (22) Reserve for additional work and for probable alterations in the above items.

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MAINTENANCE, REPAIRS AND ALTERATIONS
OF U.S. MERCHANT SHIPS UNDER
LEND LEASE TO THE U.S.S.R.

ORR PROJECT NO. 00.564
PART B

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